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ABSTRACT

This manual addresses whether schools and classroom spaces enhance or detract from the learning process and provides school assessment guidelines for communities anticipating the expansion of existing schools or the construction of new ones. It is a collection of survey and discussion tools that encourage stakeholders to discover and reflect upon the physical features of school buildings. The manual identifies what works and what does not work in K-12 school buildings. Each assessment tool presented is for a particular purpose. Building surveys focus on the assessment of existing school facilities, while photo questionnaires present alternative spatial arrangements for group discussions. Small group discussions are suggested as an effective method for creating a productive dialogue allowing people to consider many different viewpoints. (Contains 17 references.) (GR)

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Henry Sanoff AIA

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National Clearinghouse for Educational Facilities

School Building Assessment Methods

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Introduction

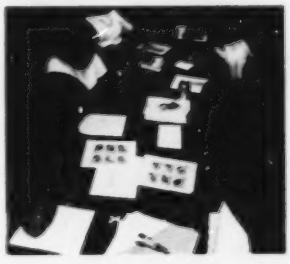
Do schools and classroom spaces enhance or detract from the learning process?

Educators often overlook the positive impact of changing the environment of the school itself when considering how to improve the quality of education. The physical environment can be considered as the second teacher since space has the power to organize and promote pleasant relationships between people of different ages, to provide changes, to promote choices and activities, and for its potential for sparking different types of social, cognitive, and affective learning. The space within the school mirrors the ideas, values, attitudes, and cultures of the people within it.

Educational philosopher John Dewey, urged that the learning environment be humane and attentive to individual children's needs. Educator Howard Gardner, expanded the traditional views of learning to include a multitude of abilities and potentials for learning. Learning is no longer considered an accumulation of knowledge but rather the ability to construct knowledge in meaningful ways for a particular purpose or for a solution to a problem. The individual style of a teacher, the curriculum being presented and the ability of the individual student must each be accommodated within the classroom space. If the physical environment is thoughtfully considered and responsive to individual teacher and student needs the new learning environment will enhance not hinder the learning process.

The School Building Assessment Manual is a guide for communities anticipating the expansion of existing or construction of new school facilities. It is a collection of survey and discussion tools that will encourage school administrators, teachers, students, and parents to discover and reflect upon the physical features of school buildings. The intent of the manual is to identify what works and what does not work in K-12 school buildings.

Each assessment tool was developed for a particular purpose. Building surveys focus on the assessment of existing school facilities, while photo questionnaires present alternative spatial arrangements for group discussion. Small group discussions are suggested as an effective method for creating a productive dialogue allowing people to consider many different viewpoints.



School Culture

School reform can be achieved when school administrators understand the nature of school culture, the reasons why culture has been a barrier to change, and why a new strategy is needed to overcome this obstruction (Kowalski, 1997).

Culture can be described as expectations of how people should behave; of commonly held values about what is worth doing and how it should be done; and of assumptions based on what has worked in the past. Culture also reflects the actual goals of a school as opposed to the stated goals (Owens, 1995). Culture is maintained in schools through a socialization process where informal learning occurs between new and more established teachers.

BECAUSE OF CULTURAL DIFFERENCES, SCHOOLS ARE NOT ALIKE.

Factors that shape a school's culture include its history, community expectations of what should or should not happen, leadership style, and traditions involving educational standards.

Culture, as perceived by educators, appears to have the strongest influence on attitudes toward change (Leithwood, Jantzi and Fernandez, 1994). Superintendents and principals are becoming increasingly aware of the power of school culture to block change as they encourage such restructuring as site-based management or the creation of school policy councils.

IGNORING THE IMPORTANCE OF A SCHOOLS CULTURE IS USUALLY ASSOCIATED WITH A LACK OF UNDERSTANDING OF THE DYNAMICS OF ORGANIZATIONAL CULTURE AND AN ASSUMPTION THAT CULTURE IS UNIMPORTANT.

To overcome these views, school administrators should have an understanding of how culture is formed, how it influences thinking and behavior, and how it can be transformed (Greenfield, 1991). The reshaping of culture requires a school climate in which open discussions can occur about the underlying assumptions regarding the purposes of schooling, leadership roles, and the distribution of power. Such a process requires resources sufficient to create a capacity for change.

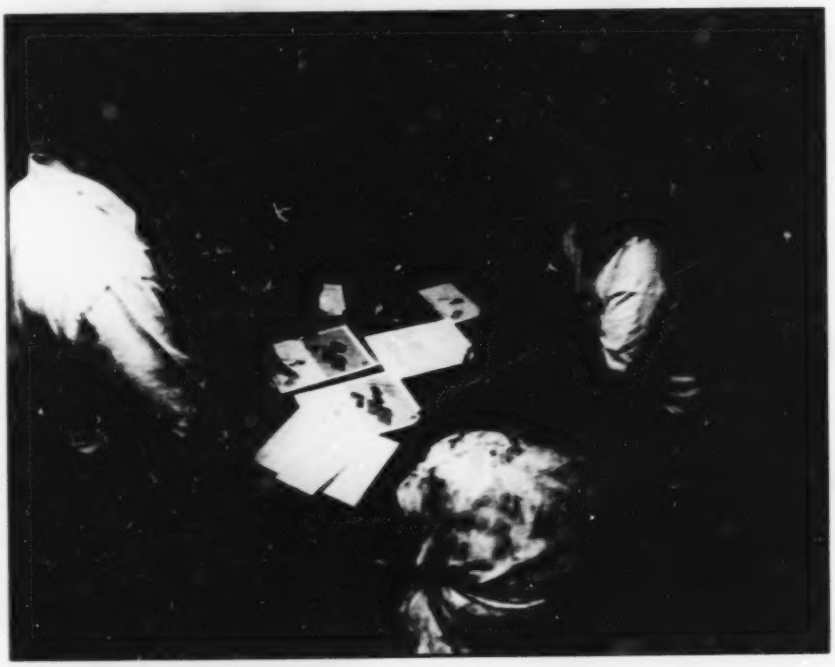
One of the differences between cultural change and other approaches to change lie in the decision making process. In traditional approaches what is to be changed and who will be affected are already decided by relatively few people possessing authority and power. In cultural approaches, objectives evolve only after the members of the school-community are able to identify the current elements of culture and to determine the extent to which these elements either enhance or hinder the goals of the school. Cultural strategies rely upon open discussions and shared decisions. In cultural change, essential decisions ought to be shaped by the ideas of

those who are most affected by change – students, educators, and community members (Marshak, 1996).

Rather than providing direction and control, school administrators would assume the responsibility of guiding the process by concentrating on listening, synthesizing, and sharing vital information. The intent is to create common understandings, beliefs, and values that determine what is done and how it is done (Prestine and Bowen, 1993).

Thomas Sergiovanni's (1994) notion of a school as a community is often thwarted by a tendency to conceptualize schools as formal organizations. Noting that life in organizations and life in communities differ in both quality and kind, he proposed that schools concentrate on community building as a means of achieving renewal. He wrote, "the connection of people to purpose and the connections among people are not based on contracts but commitments" (p. 4). He added that in organizations, relationships among people and groups are created by others; in communities, people construct their own social lives.

Metaphors, such as Sergiovanni's learning community, are predicated on the belief that change can and should occur from the center of a school and be culturally based (Trimble, 1996).



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Assessing Schools

There has been an expressed need from citizens, educators, elected and appointed officials, and architects for guidance in assessing K-12 schools. This need has been, in part, an outgrowth of reports of increased violence, dropouts, and youth unemployment. Quite often, decisions need to be made about the closing of schools or conversions, expansions and renovations yet there are few effective tools available for examining the quality of schools. With the aid of a check list, teachers, citizen groups or policy makers are guided through a procedure for interviewing, observing, and discussing ways and means for making schools more responsive to the developmental needs of adolescents and teens.

In order to experience healthy development, students require certain needs to be met. Schoolagers require diversity, which entails different opportunities for learning and different relationships with a variety of people. In a school that responds to its students' need for diversity, one would not find students all doing the same thing, at the same time, in similar rooms. One would not expect to see students sitting in neat rows of desks, all facing teachers who are lecturing or reading from textbooks. Instead, in responsive schools, students and teachers would be engaged in different learning activities in and out of the classroom. A variety of teaching methods including small group work, lectures, learning by doing, individualized assignments, and learning centers, would be used.

Students need opportunities for self-exploration as they integrate the change of adolescence into a new sense of 'self,' and as they begin to think about future vocations and avocations. They need opportunities for meaningful participation in school and community. Not only can schools provide the structure and means for students to have a real voice in the running of their schools, but they should also have the opportunity to identify and carry out projects that will improve the school environment, such as building outdoor recreation and nature areas.

Research Based Design Principles

At a regional CEFPI conference, Jeff Lackney (1998) summarized several research based design principles that are fundamental in developing a school building assessment program. They are as follows:

Stimulating environments: The use of color and texture; displays created by students so they have a sense of connection and ownership with the product.

Places for group learning: Special places such as breakout spaces, alcoves, table groupings to facilitate social learning and stimulate the social brain; turning breakout spaces into living rooms for conversation.

Linking indoor and outdoor places: Encouraging student move-

ment, engaging the motor cortex linked to the cerebral cortex, for oxygenation.

Public space: Corridors and public places containing symbols of the school community's larger purpose to provide coherency and meaning that increases motivation.

Safety: Safe places reduce threat, especially in urban settings

Spatial variety: Variety of places of different shapes, color, and light, nooks & crannies.

Changing displays: Changing the environment, interacting with the environment stimulates brain development.

Resource availability: Provide educational, physical, and a variety of settings in close proximity to encourage rapid development of ideas generated in a learning episode. This is an argument for wet areas/ science, and computer-rich workspaces to be integrated and not segregated. Multiple functions and cross-fertilization of ideas are main goals.

Flexibility: A common principle in the past continues to be relevant. Many dimensions of flexibility of learning places are reflected in other principles.

Active/passive places: Students need places for reflection and retreat away from others for intrapersonal intelligence as well as places for active engagement for interpersonal intelligence.

Personalized space: The concept of homebase needs to be emphasized more than the metal locker or the desk; the need to allow learners to express their self-identity, personalize their special places, and places to express territorial behaviors.

The community as a learning environment: Utilize all urban and natural environments as the primary learning setting, the school as the fortress of learning needs to be challenged and conceptualized more as a resource-rich learning center that supplements life-long learning. Technology, distance learning, community and business partnerships, home-based learning, all need to be explored as alternative organizational structures for educational institutions of the present and future.

These needs form the basis for an assessment program that is basically a check list underscoring the ideal situation and questions to ask in order to discover the extent to which school is fulfilling these expectations. Checklists and surveys used by students, educators, parents, citizens, and policy makers, are tools for observing and assessing,

and making decisions regarding the future of schools. The program has many possible uses among which are staff use in accreditation self-study, school boards, citizens councils, and parent-teacher organizations, for their assessment of K-12 school quality, and most important, as a component for an evaluation designed to precede modifications to the school facility.

In addition to checklists, observation forms are needed to gain a more comprehensive understanding of the school environment. Observations are required of the physical facilities, where such items as places for socialization, spatial flexibility, and opportunities for students to personalize their school, are noted. Observations of the classroom center on the ability for students to direct their own studies, and modify the classroom to suit their needs.

Post-Occupancy Evaluation (POE)

The school environment affects students and teachers health, work, leisure, emotions, and a sense of place and belonging. When the school environment works well students lives and educational performance are enhanced. While the school environment is intended to support students individual needs, it is necessary to gain knowledge about their diverse needs and how the physical environment satisfies them. Evaluation is the systematic assessment of environmental performance relative to defined objectives and requirements. The assessment process is a means of providing satisfactory environments for the people who own, manage, and occupy them.

A POST-OCCUPANCY EVALUATION (POE) IS AN ASSESSMENT PROCESS THAT CAN BE APPLIED TO ANY TYPE OR SIZE OF SCHOOL ENVIRONMENT. THE TYPE OF POE UTILIZED FOR A PARTICULAR SITUATION IS A FUNCTION OF THE AMOUNT OF TIME AVAILABLE, THE RESOURCES, AND THE DEPTH OF KNOWLEDGE NECESSARY.

A POE is a short-term process that seeks to identify major successes and failures. The methods of collecting information consist of questionnaires, walk-throughs, and interviews usually conducted with a committee representing the school's organization. Questions ordinarily focus on issues related to performance, spatial adequacy, and image. A walk-through assessment of the entire school facility relies on direct observation to verify issues that may have emerged from the questionnaire. Interviews and a summary of findings conclude the process.

Prior to initiating a POE, there are several preliminary steps that require consideration, in preparation for on-site data collection. Client briefing about the nature of the process, the type of activities involved, and shared responsibilities are necessary before conducting the POE. Research methods and analytical techniques would be determined at this stage. In addition, background information, such as building documentation, schools organizational structure, and liaison individuals, is

necessary to establish a POE plan. The plan will include the development of specific information gathering methods, sampling methods, authorization for photographs and surveys, and data recording sheets. Initially, observing the building or environment under working conditions for several hours will be sufficient to prepare a data collection plan. The primary tasks in conducting the POE are the collection and analysis of data. Timing, too, is important in order to minimize disruption of functions in the operation of the school. Therefore, coordination with the user groups will facilitate the distribution and collection of data-recording forms, and other printed materials necessary for a manageable evaluation process.

Data collection and analysis precede the interpretation of the results into useful findings. Reporting and presenting the findings of the POE are vital to the client's understanding of the results. POE findings typically describe, interpret, and explain the performance of a school building. After extensive discussion of the findings, a recommendation for future action takes place.

POE Information Gathering Methods

Success or failure of a POE often depends on the skill with which a researcher selects and uses information-gathering methods. Friedman, Zimring, and Zube (1978), have classified the methods used in data collection into three categories–direct observation, interview, simulation, all of which directly or indirectly involve student and teacher participation.

Direct Observation: In this method, data are collected by direct contact with real life situations and by behaviors that occur naturally.The observer, unobtrusively, records ongoing events and records all activities in a particular setting.

Interview: This method is the most commonly used tool for assessing people's reactions to physical settings. Interviews can be structured, where the type and order of questions are decided in advance; or they can be unstructured where the interviewer asks questions of interest while visiting a site.

Simulation: In this method people's comments are evoked from representations of settings, rather than from the settings themselves.

Tasks in the POE Assessment Process

When planning a POE, it is necessary to identify the tasks needed: *initiate, plan, execute,* and *use* the results. To begin, it is necessary to identify who initiated the idea of the assessment process, and the motivation behind the request. Next, the key issue or any unresolved problem should be clarified to begin the planning process. This will aid in determining the kind of information needed, the scope of the assessment, who will conduct the assessment, and who will participate. The execution phase consists of selecting the appropriate tools

needed for the type of data to be collected. Finally, a forum for the discussion of outcomes can raise the awareness of the benefits of the assessment. To bring the POE process to proper completion, actions must occur to honor whatever commitments were made to participants of the process. Key questions need to be posed before finalizing an assessment plan. They are a convenient way to inquire into the details that must be considered. Baird, et. al. (1996) identify a sequence of questions corresponding to the phases of the POE process:

- Who initiated the idea for an assessment?
- What is the motivation behind the request for an assessment?
- Who needs to authorize the POE?
- What are the key issues?
- What are the anticipated benefits?
- What kind of information is needed?
- Who will manage the evaluation process?
- What is the required scope of the assessment?
- What method will be used?
- What constraints are there?
- What resources are needed?
- Is the evaluation plan subject to approval?
- What techniques will be used to collect data?
- What data is needed?
- What information can be extracted from the analysis of data?
- Does the information gathered answer the key issues?
- How will the results be communicated?
- How will the outcomes of the evaluation be discussed?
- Who will authorize action?
- What actions will be authorized?

A key issue is whose judgments should be sought in an assessment. There is a tendency to regard expert opinion as always more reliable and correct. For many aspects of the environment, the experts are the people who know most about using it–the user.

Assessment Methods

Responsive schools do not all look alike. To assess a school's quality it is necessary to observe it in action. Thus, a checklist of observable items is appropriate for use by lay people and professionals. The assessment items represent evidence of the existence of ideal characteristics in the school's physical environment necessary to support the developmental needs of K-12 students.

The assessment checklists are designed to be used by students, teachers, parents, citizens, architects, and policymakers. A school board, a citizen's advisory council, a parents group or a school staff and students can use the checklists as a guide for observing and assessing K-12 schools. The assessment tools are not intended to be used as a strict evaluation instrument, with its findings to be used against schools or school boards. Instead, the information and insights gained by individuals and groups through the use of these tools are intended to serve as a basis for an informed dialogue and consensus building with those involved in shaping K-12 school environments. School and classroom assessments are tools to aid in the design decision making process for the renovation, expansion or construction of new facilities.

Six Factor School Building Assessment: A Walking Tour

An approach for developing a deeper understanding of the school environment is a self-guided tour. Unlike other assessment strategies that rely upon conventional social science techniques for describing and judging the environment, the SIX FACTOR SCHOOL BUILDING ASSESSMENT offers individuals and groups a procedure for taking a structured walk through and around a building. This is an impressionistic approach that increases people's awareness of the environment by focusing on observable factors. The results of such a walk-through encourage responses about views, walkways, barriers, orientation, wayfinding and appearance.

Tom Markus, in his book, Buildings and Power (1993), describes the distinct elements of buildings to be form, or what things look like; what people do in the building; and how we sense where we are, in what relation to other spaces inside and outside the building. Observers using this checklist appraise visual and spatial quality in terms of six key elements–context, massing, interface, wayfinding, social space, and comfort. Any building or group of buildings is amenable to such appraisal. By using a series of checklist questions and a rating scheme, each factor is appraised. The process requires comments to supplement the factors described in the checklist.

Six Factor School Building Checklist: A Walking Tour

The six factor school building assessment is an approach that allows you to focus on six key elements of building assessment - **context, massing, interface, wayfinding, social space** and **comfort**. By using a series of checklist questions and a numerical rating scale you can assign a score to each factor being assessed.

On each item below, rate your satisfaction with the overall quality of the building design where:

VU=Very Unsatisfactory **U**=Unsatisfactory **SU**=Somewhat Unsatisfactory **N**=Neither **SS**=Somewhat Satisfactory **S**=Satisfactory **VS**=Very Satisfactory

Factor 1 – Context: The school building's setting

	VU	U	SU	N	SS	S	VS
1- Does the building suit the pattern of the surrounding streets?	☐	☐	☐	☐	☐	☐	☐
2- Does the scale of the building suit the site it sits upon?	☐	☐	☐	☐	☐	☐	☐
3- Does the scale of the building suit the scale of the surrounding buildings?	☐	☐	☐	☐	☐	☐	☐
4- Do the public and private areas relate well to one another?	☐	☐	☐	☐	☐	☐	☐
5- Do the land uses adjacent to the building seem to fit harmoniously with the building?	☐	☐	☐	☐	☐	☐	☐
6- Does the school building and its intended use fit well with the type and uses of adjacent buildings?	☐	☐	☐	☐	☐	☐	☐
7- Does the appearance of the building fit in well with the buildings surrounding it?	☐	☐	☐	☐	☐	☐	☐

Write any comments or concerns that you may have about the way the building suits or fails to suit the context of the surrounding area.

_____

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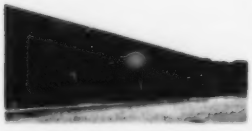
Factor 2 - Massing: Buildings are organized in form into some type of massing. Massing of the parts gives both form and meaning as well as variety to the building.



	VU	U	SU	N	SS	S	VS
1- Viewed from the outside, do the building parts integrate well with each other to form pleasing appearance?	☐	☐	☐	☐	☐	☐	☐
2- Do the subdivided parts of the building appear to have a function that is easy to identify?	☐	☐	☐	☐	☐	☐	☐
3- Is it clear what various parts of the building might mean to visitors?	☐	☐	☐	☐	☐	☐	☐
4- Are the various parts of the building planned carefully in relation to one another and to the characteristics of the site?	☐	☐	☐	☐	☐	☐	☐
5- Does the relationship between the parts of the building make to appear as one unified structure?	☐	☐	☐	☐	☐	☐	☐
6- Does variation in the massing to provide interest and variety?	☐	☐	☐	☐	☐	☐	☐

Discuss the subdivision of the building into identifiable parts and how successful has the concept of massing been employed.

_____

_____

Factor 3 - Interface: The interface is the meeting place where the inside of the building connects with the outside.

	VU	U	SU	N	SS	S	VS
1- Does the exterior of the building indicate its interior function(s)?	☐	☐	☐	☐	☐	☐	☐
2- Does the inside of the building connect with the outside of the building?	☐	☐	☐	☐	☐	☐	☐
3- Are the exits and entrances easily accessible?	☐	☐	☐	☐	☐	☐	☐
4- Are the various openings related to thoughtful planning of the interior? (Consider entry of light, view, privacy, noise, heat, glare, atmosphere, etc.)	☐	☐	☐	☐	☐	☐	☐
5- Are the exits appropriate from a safety point of view?	☐	☐	☐	☐	☐	☐	☐
6- How pleasant is the experience when you move from the exterior of the building to the interior by means of the main entrance?	☐	☐	☐	☐	☐	☐	☐
7- How clear are the clues to what is public and what is private?	☐	☐	☐	☐	☐	☐	☐

Write your comments about how well the design of the building has addressed the problem of interface.

_____

_____

Factor 4 - Wayfinding: Wayfinding is the ability for students, teachers, staff and visitors to discern routes, traffic patterns or passageways in and around the building.

	VU	U	SU	N	SS	S	VS
1- Are sufficient routes, pathways, streets and passageways provided to and around the building?	☐	☐	☐	☐	☐	☐	☐
2- Do the routes link the building to the surrounding building or structures?	☐	☐	☐	☐	☐	☐	☐
3- Are the routes arranged to consider busy periods, quiet periods, one-way flows, regular movement patterns, traffic jams?	☐	☐	☐	☐	☐	☐	☐
4- Are the nodes (meeting points) for traffic around the building and what happens there?	☐	☐	☐	☐	☐	☐	☐
5- Are all the circulation routes understandable and convenient?	☐	☐	☐	☐	☐	☐	☐
6- Are all the circulation routes within the building easily understood by newcomers, visitors, and service people?	☐	☐	☐	☐	☐	☐	☐
7- Are the interior circulation routes clearly marked and easily understood?	☐	☐	☐	☐	☐	☐	☐

Write your comments about the clarity of circulation in and around the building.

_____

_____

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Factor 5 - Social Space: The ability of the school environment to accommodate diverse human needs

	VU	U	SU	N	SS	S	VS
1- Does the building suit the students' ability to personalize their workspace?	☐	☐	☐	☐	☐	☐	☐
2- Does the classroom function in relation to other space requirements? (Such as: small group meetings, projects, etc.)	☐	☐	☐	☐	☐	☐	☐
3- Does the classroom allow for needed privacy, or individual pursuits?	☐	☐	☐	☐	☐	☐	☐
4- Does the building arrangement allow for casual contact among students and teachers?	☐	☐	☐	☐	☐	☐	☐
5- Does the building arrangement allow for a centralized area of information exchange?	☐	☐	☐	☐	☐	☐	☐
6- Are there exhibition spaces to display student work?	☐	☐	☐	☐	☐	☐	☐
7- Is the location of teachers' offices accessible?	☐	☐	☐	☐	☐	☐	☐

Write your comments about the building's success in accommodating social needs:

_____

_____

Factor 6- Comfort: The environmental conditions affecting human comfort

	VU	U	SU	N	SS	S	VS
1- Do the learning spaces in the building suit an individual's thermal comfort?	☐	☐	☐	☐	☐	☐	☐
2- Is there an ability to adjust thermal comfort on an individual basis?	☐	☐	☐	☐	☐	☐	☐
3- Does the light level in the building support learning spaces?	☐	☐	☐	☐	☐	☐	☐
4- Is the noise level in a typical learning space distracting?	☐	☐	☐	☐	☐	☐	☐

Write your comments about the achievement of human comfort in the building:

_____

_____

Write any concluding comments you may have based on your overall assessment of the building:

_____

_____

_____

_____

School Building Observation Form

The SCHOOL BUILDING OBSERVATION FORM is a set of statements that represent a brief introduction to or rediscovery of the school environment. School staff and students assessing their school using this form may rediscover positive features as well as possible improvements to the environment. Responses to these statements provide the visitor with an overall first impression of the existing facilities. The plan for using the findings should include opportunities for individual observers to compare their responses.

School Building Observation Form

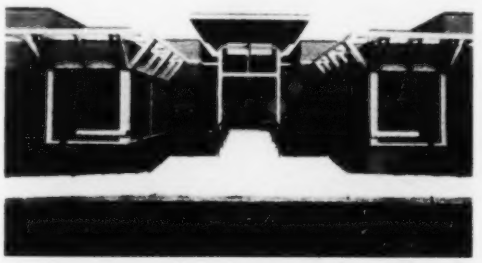
Please mark within the boxes whether you agree or not with each of the following statements about the physical facilities.

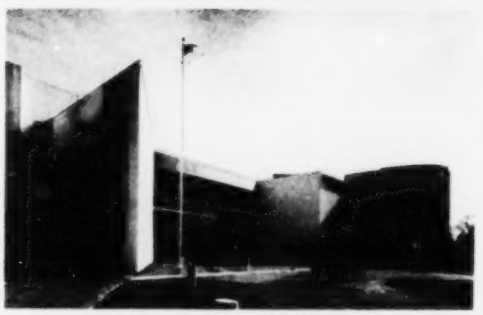
	Yes	No
1- Building is neat, clean, and in good repair. There are few, if any, signs of vandalism or graffiti	☐	☐
2- Student work is displayed on bulletin boards, walls, tables in classes and other areas throughout the building	☐	☐
3- Pictures and display depict various racial and ethnic groups	☐	☐
4- Pictures, posters, and displays show both boys and girls engaged in a wide variety of activities, for example: girls as doctors, policewomen, construction workers; boys as nurses, social workers, secretaries; girls playing baseball and boys cooking	☐	☐
5- Announcements are posted by students and staff about activities and concerns	☐	☐
6- The building itself is flexible, including some large open spaces, some small rooms. Some spaces are multifunctional	☐	☐
7- Furniture throughout the school is movable	☐	☐
8- There are quiet places for individuals, pairs, and groups of students to withdraw, relax, and think, such as student lounges or reading lofts	☐	☐
9- There are identified places where students can be noisy and engage in physical activity	☐	☐
10- There is plenty of room in corridors and classrooms for movement from one place to another	☐	☐
11- There is outdoor space for projects such as science gardens and building projects. It is being used	☐	☐
12- Students contribute to the upkeep and appearance of the school. For example, they may build furniture, clean their own tables in the cafeteria, pick up trash, decorate bulletin boards	☐	☐
13- There are doors or curtains on the stalls in the bathrooms and dressing rooms	☐	☐

School Building Rating Scale

A comprehensive assessment tool is the SCHOOL BUILDING RATING SCALE. This qualitative assessment tool is organized into categories that are essential components necessary for meeting the demands of an optimum learning environment. The components of the rating scale include physical features, outdoor areas, leaning environments, social areas, media access, transition spaces and circulation routes, visual appearance, and safety and security. Fifty-five statements pertaining to the school building are rated by building users such as students and school staff. The rating scale is based on a continuum from *very unsatisfactory* (VU) *to very satisfactory* (VS). Since all the criteria are based on qualitative impressions of the school environment, perceptual differences are bound to occur between students and school staff.

Buildings and spaces convey messages reflecting the inner life, activities, and social values of the users. Characteristics like shape, color, or arrangement, enable the making of vividly identified mental images of the environment. These environmental cues have something to say about the people who occupy buildings as well as the people who created these buildings. Similarly, people read these cues, make judgements, and act accordingly. These messages play an important role in people's comprehension of the environment. Specific environments can be evaluated about the appropriateness of the messages conveyed. Effective methods for eliciting responses to the environment are through the use of techniques, such as drawings and photographs.





School Building Rating Scale

For each item listed below, please rate your overall satisfaction with its quality, where:

VU=Very Unsatisfactory **U**=Unsatisfactory **SU**=Somewhat Unsatisfactory **N**=Neither **SS**=Somewhat Satisfactory **S**=Satisfactory **VS**=Very Satisfactory

Physical Features

	VU	U	SU	N	SS	S	VS
1- Connection between indoor and outdoor areas within the campus	☐	☐	☐	☐	☐	☐	☐
2- Appropriate building for learning	☐	☐	☐	☐	☐	☐	☐
3- Accessibility for people with disabilities	☐	☐	☐	☐	☐	☐	☐
4- Building designed and built to the scale of children	☐	☐	☐	☐	☐	☐	☐
5- Control of internal and external noise level	☐	☐	☐	☐	☐	☐	☐
6- Views and natural light through windows	☐	☐	☐	☐	☐	☐	☐
7- Visibility of main entrance for students and visitors	☐	☐	☐	☐	☐	☐	☐

Outdoor Areas

	VU	U	SU	N	SS	S	VS
8- Appropriate outdoor areas for learning	☐	☐	☐	☐	☐	☐	☐
9- Green areas adjacent to the learning environments	☐	☐	☐	☐	☐	☐	☐
10- Outdoor play areas for students	☐	☐	☐	☐	☐	☐	☐
11- Outdoor learning environments with natural elements	☐	☐	☐	☐	☐	☐	☐
12- Outdoor learning environments for social interaction	☐	☐	☐	☐	☐	☐	☐
13- Outdoor learning areas for individual learning styles	☐	☐	☐	☐	☐	☐	☐

Learning Environments

	VU	U	SU	N	SS	S	VS
14- Indoor learning areas for individual learning styles	☐	☐	☐	☐	☐	☐	☐
15- Centralized grouping of administration areas	☐	☐	☐	☐	☐	☐	☐
16- Workrooms adjacent to classrooms	☐	☐	☐	☐	☐	☐	☐
17- Areas of instruction for the arts	☐	☐	☐	☐	☐	☐	☐
18- Areas of instruction for sciences	☐	☐	☐	☐	☐	☐	☐
19- Teachers workspace	☐	☐	☐	☐	☐	☐	☐
20- Comfortable and stress-free classrooms	☐	☐	☐	☐	☐	☐	☐
21- Stimulating classroom atmosphere for learning	☐	☐	☐	☐	☐	☐	☐
22- Size of the learning groups in classrooms	☐	☐	☐	☐	☐	☐	☐
23- Comfortable classroom temperature	☐	☐	☐	☐	☐	☐	☐
24- Indoor air quality in classrooms	☐	☐	☐	☐	☐	☐	☐
25- Adaptability of classrooms to changing uses	☐	☐	☐	☐	☐	☐	☐
26- Lighting quality in classrooms	☐	☐	☐	☐	☐	☐	☐
27- Classrooms directly connected to outdoors	☐	☐	☐	☐	☐	☐	☐
28- Classroom walls conducive for displaying students' work	☐	☐	☐	☐	☐	☐	☐
29- Hallways conducive for displaying student work	☐	☐	☐	☐	☐	☐	☐

Social Areas

	VU	U	SU	N	SS	S	VS
30- Inside quiet areas for eating	☐	☐	☐	☐	☐	☐	☐
31- Outside quiet areas for eating	☐	☐	☐	☐	☐	☐	☐
32- Private spaces for students both inside and outside building (reading areas, quiet places, reflection areas, listening areas etc.)	☐	☐	☐	☐	☐	☐	☐
33- Places where students can be noisy and engage in physical activity	☐	☐	☐	☐	☐	☐	☐
34- Public areas fostering a sense of community	☐	☐	☐	☐	☐	☐	☐
35- Students personalizing their own places	☐	☐	☐	☐	☐	☐	☐

Media Access

	VU	U	SU	N	SS	S	VS
36- Media and technology access for students in the learning environments	☐	☐	☐	☐	☐	☐	☐
37- Media and technology access for teachers in the learning environments	☐	☐	☐	☐	☐	☐	☐
38- Communication access in the learning environments (phones)	☐	☐	☐	☐	☐	☐	☐

Transition Spaces and Circulation Routes

	VU	U	SU	N	SS	S	VS
39- Circulation routes within and among learning environments	☐	☐	☐	☐	☐	☐	☐
40- Hallways as passageways within the school	☐	☐	☐	☐	☐	☐	☐
41- Clear markings for interior circulation routes	☐	☐	☐	☐	☐	☐	☐
42- Transition spaces inside and outside of the learning environments	☐	☐	☐	☐	☐	☐	☐
43- Covered pathways among buildings within the campus	☐	☐	☐	☐	☐	☐	☐

Visual Appearance

	VU	U	SU	N	SS	S	VS
44- Visual appearance of the exterior of school building	☐	☐	☐	☐	☐	☐	☐
45- Visual appearance of the interior of school building	☐	☐	☐	☐	☐	☐	☐
46- Harmony of the school building with surroundings	☐	☐	☐	☐	☐	☐	☐
47- Variation of ceiling heights within the school for comfort and intimacy	☐	☐	☐	☐	☐	☐	☐
48- Visual stimulation of school building	☐	☐	☐	☐	☐	☐	☐

Degree of Safety and Security

	VU	U	SU	N	SS	S	VS
49- Safe location of learning environments; free of non-pedestrian traffic	☐	☐	☐	☐	☐	☐	☐
50- Safe indoor environments for students to learn	☐	☐	☐	☐	☐	☐	☐
51- Safe outdoor environments for students to learn	☐	☐	☐	☐	☐	☐	☐
52- Secured storage spaces for students	☐	☐	☐	☐	☐	☐	☐
53- Secured storage spaces for teachers	☐	☐	☐	☐	☐	☐	☐
54- Places designed for personal items of each student	☐	☐	☐	☐	☐	☐	☐

Overall Impression

	VU	U	SU	N	SS	S	VS
55- Student friendly learning environments	☐	☐	☐	☐	☐	☐	☐
56- Teacher friendly learning environments	☐	☐	☐	☐	☐	☐	☐
57- Other (Specify) _____	☐	☐	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐	☐	☐

Personal Information

58- Now we want to know a little bit about you. What is:

a) Your position? (Check the one that applies)

- ☐ Faculty
- ☐ Staff
- ☐ Student

b) Your Sex: ☐ Male ☐ Female

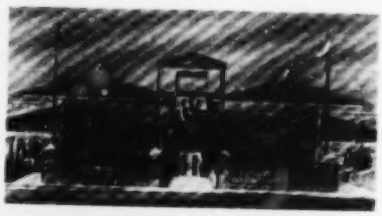
c) No. of years with the present school: _____

Photo Questionnaires

Photo questionnaires and interviews are an effective means used to elicit evaluative comments about physical settings. People interpret the identity and meaning of their environment from the interaction of, and their interaction with a wide variety of physical features. In the school environment, there are a variety of inside and outside places that evoke either good or bad feelings.

Becoming aware of perceived environmental effects is a necessary first step in striking the delicate balance between familiarity and monotony and boredom, and between variety and confusion and disorientation. With understanding of how the physical surroundings affect us psychologically, we can become more aware of our effects on them, and on ourselves, when we allow them to be changed. We will then start to realize the importance of our concern for our surroundings, and eventually work toward the improvement of their quality.

O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
O Dislike	Like	O



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O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
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O Interesting	Boring	O
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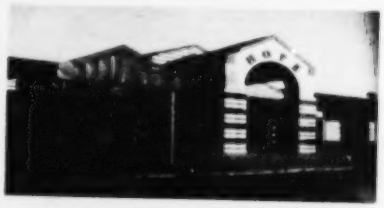


O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
O Dislike	Like	O

Informal Social Space Rating Scale

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

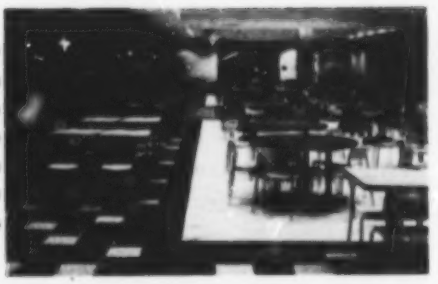
O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

Dining Space Rating Scale

O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
O Dislike	Like	O



O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
O Dislike	Like	O

O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
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O Interesting	Boring	O
O Dynamic	Static	O
O Repelling	Inviting	O
O Novel	Common	O
O Unpleasant	Pleasant	O
O Friendly	Unfriendly	O
O Dislike	Like	O

Wish Poem

A wish poem is an approach that encourages students, teachers and parents to fantasize about their dream school through an open, yet structured process. Wish poems are considerably more effective than stating objectives, particularly if the intention is to keep the thinking global and exploratory. Unlike traditional poems that rhyme, wish poems are spontaneous and allow for the free flow of information. The process consists of a group of statements composed of responses to the phrase, "I WISH MY SCHOOL....."

Comparisons can be made between the wishes of students from different grade levels, teachers, and parents. When wish statements are combined they provide a profile of the school community's desires.

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

I WISH MY SCHOOL _____

Group Interaction Approach

To stimulate more participation among school community members, design aids are developed to increase people's awareness to the architectural implications of the school environment.

UNLESS A TEACHER UNDERSTANDS WHY ONE ROOM ARRANGEMENT MAY BE SUPERIOR TO ANOTHER, ALL THE PHYSICAL CHANGES IN THE WORLD WILL HAVE LITTLE OR NO IMPACT ON THE NATURE OF THE LEARNING PROCESS WITHIN THE CLASSROOM.

It requires more than moving furniture. Room arrangements should reflect the educational purpose the teacher has in mind, and the educational process by which he or she proposes to achieve them.

Prior to planning and designing appropriate environments for students, the objectives for that environment must be discussed, considered, and decided upon by the teachers, administrators, and students. The relationship between the activities students engage in, the places that accommodate those activities, and their relationship to the objectives, is the basis for designing. The objectives that are found in the educational literature describe concepts that are paramount to the development of the student. These objectives include personalization of the learning environment, student control of movement, provision of adequate meeting and social gathering places, environmental flexibility to accommodate different student activities, and the ability for students to facilitate projects and studies in their areas of interest.

While there is agreement within the education profession that these objectives may be crucial to the development of students, there is a lack of agreement about the relationship of these objectives to the places in which they ought to occur, or to the variety of possible spatial arrangements. The interpretation and philosophy of an educational program has a significant impact on how the educational objectives are evidenced and realized in the learning environment. For example, "personalization of place" is an important objective because, as the educational literature points out, the student needs to have a stake in his/her environment.

PERSONALIZATION REFLECTS A PERSON'S COMMITMENT TO A PLACE BY REFLECTING THEMSELVES IN THEIR SURROUNDINGS.

Where personalization exists in the learning environment, it manifests itself in a number of ways. Prominent display of items of special interest to students is one way in which personalization is exhibited. The items displayed should identify who occupies and uses a particular place by reflecting their interests and personality, whether they are students or teachers. Space use can reflect connections among home, school, and community, in addition to displaying student work.

Another important aspect of personalized space is the presence of designated places where students can gather, free from danger, to engage in stimulating activities, conversation, and exploration of ideas. Such places may take the form of outdoor courtyards, outdoor tables and benches, or interior places such as student lounges, or corners of a larger room.

After recording observations, interviewing students and staff, the school community members are ready to consider features of the physical environment, through small group discussion sessions that stress consensus decision making. An opening discussion can be devoted to establishing commonly agreed upon objectives.

Group participants chose the most important statements from a prepared list compiled from the educational literature. This open discussion permits different viewpoints to be heard with the possibility that participants could learn from each other. Once objectives are selected, they are matched to photographs of school settings that satisfied the desired intentions. The photographs selected include typical school settings as well as unusual places and settings to achieve the desired intention.

Learning Environments

RELATING OBJECTIVES FOR LEARNING TO EDUCATION (ROLE) facilitates a dialogue between teachers, students, parents, administrators, and designers in the process of creating a new or renovating an existing school. Participants are involved in exploring aspects of the school environment by considering alternative approaches to teaching and learning. OBJECTIVES and LEARNING METHODS were selected from the educational literature to allow participants the possibility of discussing numerous options. They are introduced to stimulate a discussion about the purpose of learning, and the types of physical SETTINGS that would enhance student learning. In planning for efficient and effective achievement of educational objectives, it is necessary to consider the following steps:

•Identify the OBJECTIVES to be achieved.

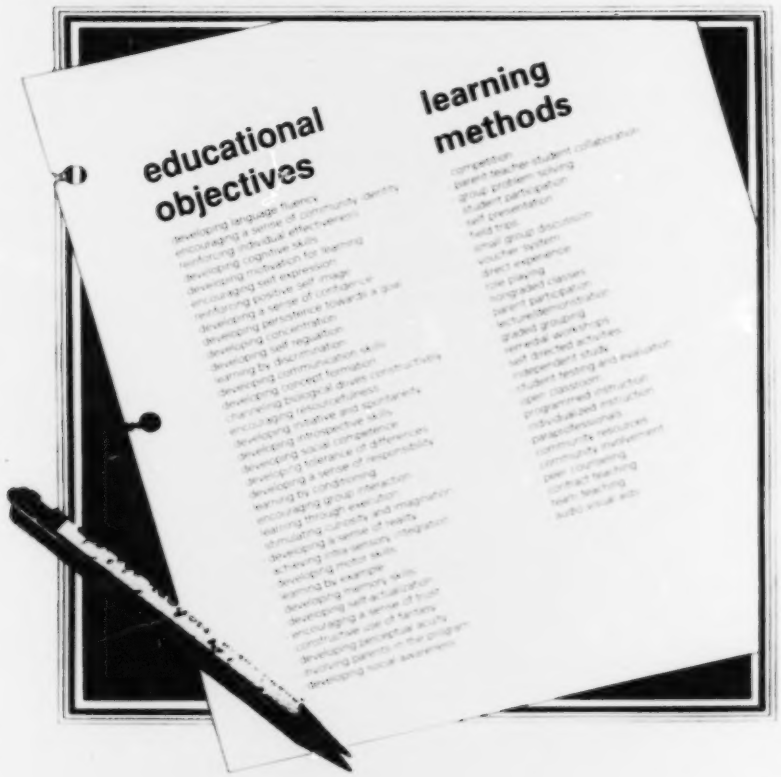
•Select appropriate LEARNING METHODS to be used to accomplish the objectives considering the role relationships between student and teacher; whether student or teacher directed. The difference is primarily who makes the decision about the learning activity.

•Match SETTINGS to places where LEARNING METHODS will be accomplished.

ROLE is to be played by groups of three to five people, however there is no limit to the number of possible groups in this exercise. To begin, each player individually selects, from the list provided, no more than four OBJECTIVES that seem to be the most important. Brief notes should be made justifying each choice. After each player has made his or her choices, the individual lists are pooled. Through discussion, the group chooses from the aggregated list, no more than four OBJECTIVES that are agreeable to all participants. Group members are urged to forcefully support their individual choices, even if other members did not make the same choice, until they persuade or are persuaded by others that an OBJECTIVE should or should not be included in the final list. When consensus is reached, the choices should be recorded on the game record sheet. The record sheet is used to report the final decisions.

Next, each OBJECTIVE should be examined to identify the three appropriate LEARNING METHODS necessary to accomplish the OBJECTIVE. Individual choices are then pooled for a group discussion, reaching a consensus about four LEARNING METHODS for each OBJECTIVE.

Each LEARNING METHOD should be qualified whether teacher directed (TD) or child directed (CD). Combining these two components-OBJECTIVES and LEARNING METHODS- the best SETTING should be identified to fulfill the requirements established by the group. A final discussion of all groups might consist of representatives from each group reporting their collective decisions, with a total group summation of all decisions.



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Settings
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Curriculum and the Classroom

In the first half of the twentieth century, a standardized classroom plan was designed where desks were arranged in rows and columns to maintain order and control student behavior. Silence was encouraged in the classroom by teachers in order to keep students more focused. Students were not allowed to move within the classroom in order to avoid disruptive behavior. Educators at the time considered students as products and schools as machines. Students were the raw material, fed in at one end, batch processed, and turned out at the other. Educators called those values of education the *hidden curriculum* (Grosvenor, Lawn, & Rousmaniere, 1999). The hidden curriculum had an impact on the design of classrooms as well as the school building. For example, classrooms were located on both sides of the hallway like the workstations of an assembly line.

Generally, a curriculum is described as what teachers teach to students. A curriculum is also defined as a triangular relationship between teachers and students (McDonald,1996). A curriculum cannot be transferred to students without the interpretation of the teacher. While school officials have focused their attention on the best curriculum, and the best methods of instruction, the classroom and the individual problems of teachers and students have been ignored. The vast array of educational research has turned up no curriculum, teaching technique, or special school program that consistently improves students' school performance (Pauly, 1991). Education is built out of the daily efforts of teachers and students in their classrooms.

The classroom, then, is the setting in which education takes place. Studies of school effectiveness clearly indicate that there are significant differences in the amount of learning taking place in different schools and in different classrooms within the same school. The discovery of classroom differences and the people in them are at the core of successful schooling. Principals and curriculum can be called in as resources, but the quality of education is ultimately determined by the classroom actions of students and teachers supported by the appropriate design of the learning environment.

Another important facet of thinking about the curriculum is that it requires of school that it becomes a place of teacher learning too. This requires opportunities for teachers to meet in learning groups, study privately, and gain access to teaching resources. Good teaching is more stable and reliable when groups, rather than individuals are expected to supply it. When teachers are permitted to work in groups with planning time, teachers can build on each other's strengths and compensate for each other's weaknesses. Team teaching allows more flexibility in the distribution of teachers' expertise. Consequently, team teaching can be conceived of as a curriculum innovation since it may facilitate a shift in what is learned in school.

Classroom Awareness

Teachers are much more influenced by the physical environment than they realize. Malcom Seabourne, a historian of school building in England suggests that the building made the teaching method. The separate classroom was a sign that teachers were trusted to be independent and had greater privacy. The classroom was designed and built to represent and shape a particular form of teaching behavior. The way a school is designed to work reflects social ideas about institutions and the education these institutions are created to further (Grosvenor et. al., 1999).

THE CLASSROOM ENVIRONMENT INFLUENCES STUDENTS AND TEACHERS BEHAVIOR IN MANY DIFFERENT WAYS.

The shape of spaces, furniture arrangements, and signs are physical cues that transmit silent messages, and both teachers and students will respond. These environmental messages stimulate movement, call attention to some things, but not others, encourage involvement, and invite students to hurry or move calmly. This environmental influence is continuous, and how well it communicates with the users will depend on how well the environment is planned. Classroom arrangement is not a mere technicality, or a part of the teacher's style. It reflects assumptions about the teaching-learning process and its outcomes. The usual classroom seating arrangement of rows headed by a teacher at the front usually assumes that all information comes from the teacher. This arrangement assumes a teacher-centered classroom where the learning process depends upon the teacher's direction.

Considering the new thinking about how students learn, Halstead (1992) envisioned the classroom of tomorrow where classrooms will be like studios where students will have their own workspace. In addition, there would be workspaces for cooperative learning by groups of different sizes, quiet private areas for one-on-one sessions, and places where students can work independently.

Teachers need to learn how to question the classroom setting in a constructive way, looking for solutions and feeling in control over changeable features. Taking control would permit the teacher to experiment with classroom modifications to determine what works and what does not work, since each teacher and each group of students will be different. The classroom cannot be considered as a static fixture; it needs to be questioned and transformed. The ability for teachers to control the classroom environment leads to feelings of accomplishment and independence, whereas a lack of control may result in helplessness.

Awareness can make a teacher sensitive to subtle aspects of the environment and bring to light the adverse effects of a poorly organized environment. The goal in developing classroom awareness is to reach a new understanding of how the environment supports students' activities and nurtures their development.

Awareness is the first step in provoking teachers to take action and rearrange a setting. Awareness needs to be transformed into a critical, probing, problem-seeking attitude towards the classroom environment. Developing awareness will allow teachers to make choices by experimenting with a variety of spatial arrangements. This awareness involves understanding the effect that the classroom environment has on the teacher and the students. Responding to this knowledge requires that teachers act as designers of their environments, taking deliberate control of the settings.

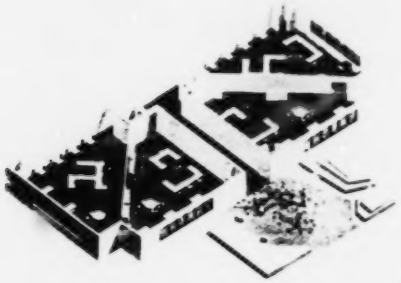
The physical assessment of classrooms can be accomplished by comparing student ratings of different settings using the same descriptive statements, as well as between the *actual* and *ideal* classroom. The technique consists of descriptive statements (below) printed on separate cards where students sort the cards into piles according to the issue under consideration,such as "most like my classroom" or "most not like my classroom." This technique which David (1982) describes as a Classroom Environment Q-sort is most effective when it supplements other information gathering approaches.

Classroom Environment Ratings

Please mark within the boxes whether the statements are MOST LIKE (L) or MOST NOT LIKE (U) my classroom.

	L	U
1- I have enough space to work without others crowding me	☐	☐
2- My room has places where you can be by yourself if you want to	☐	☐
3- I have a place of my own where I can keep my things	☐	☐
4- In my room it is easy to concentrate on what you are doing	☐	☐
5- I get to choose where I sit	☐	☐
6- I can see everything that goes on in our room from where I sit	☐	☐
7- I spend most of the day at my desk	☐	☐
8- The furniture in my room is arranged to help us work together easily	☐	☐
9- I feel like I have a place here that belongs to me	☐	☐
10- I can fix up my place the way I want it	☐	☐
11- There are lots of good places to work in my room	☐	☐
12- It is quiet enough for me in my room	☐	☐
13- We often change the way my room is arranged	☐	☐
14- My room is neatly arranged	☐	☐
15- My room is clearly organized	☐	☐
16- My room is just the right size for me – not too big and not too small	☐	☐
17- My room is pleasant to look at	☐	☐
18- My room is a special place for me	☐	☐
19- There are lots of comfortable places in my room	☐	☐
20- I get to help decide how our room will be arranged	☐	☐
21- There are lots of interesting things to do in my room	☐	☐
22- I get to help add things to my room to make it even better	☐	☐
23- There are places for me to display my work	☐	☐

Classroom Arrangement Rating Scale



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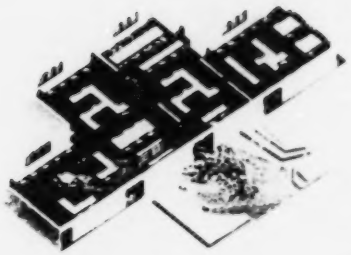

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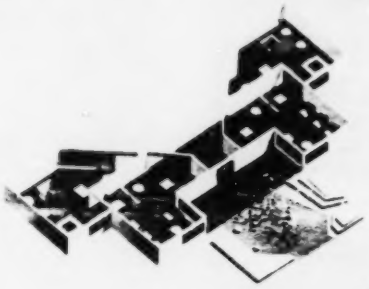

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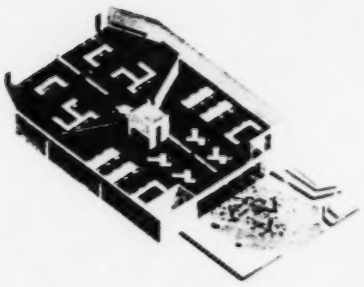

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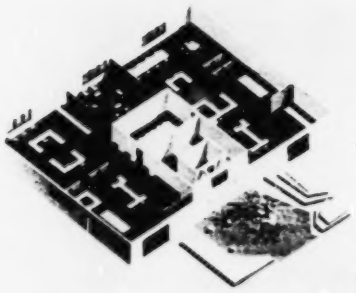

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Please select the best classroom arrangement that would satisfy each of the following statements.

	1	2	3	4	5	6
1- Students have some opportunities to move around	☐	☐	☐	☐	☐	☐
2- Students can engage in activities, manipulating objects & materials	☐	☐	☐	☐	☐	☐
3- Seating arrangements vary, including small groups, pairs, individuals, & total group	☐	☐	☐	☐	☐	☐
4- Individual students and small groups can chose from alternative learning activities	☐	☐	☐	☐	☐	☐
5- Small groups of students can work independently on projects or assignments	☐	☐	☐	☐	☐	☐
6- A variety of teaching methods can be used by teachers	☐	☐	☐	☐	☐	☐
7- Team teaching is easily facilitated	☐	☐	☐	☐	☐	☐
8- Teachers can make quick, clear transitions from one activity to another	☐	☐	☐	☐	☐	☐
9- Teachers can move around the classroom interacting with individuals and groups	☐	☐	☐	☐	☐	☐
10- Students have a sense of identity and belonging	☐	☐	☐	☐	☐	☐
11- Circulation is minimized	☐	☐	☐	☐	☐	☐

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Indoor Learning Space Rating Scale

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
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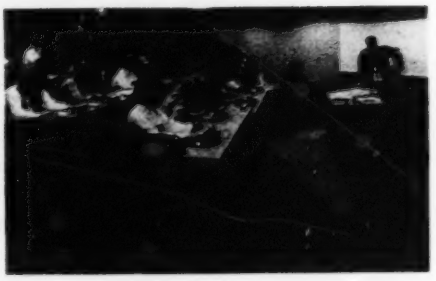
O	Friendly	Unfriendly	O
O	Dislike	Like	O



O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

31

Outdoor Learning Space Rating Scale

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

O	Interesting	Boring	O
O	Dynamic	Static	O
O	Repelling	Inviting	O
O	Novel	Common	O
O	Unpleasant	Pleasant	O
O	Friendly	Unfriendly	O
O	Dislike	Like	O

Design Team Facility Visit

The key purpose of a facility visit is to inform the design process. It is conducted by the design team to learn about the school, the students, the staff, the administration, and the community in which it is located. The facility visit gives the members of the school community and the design team a common frame of reference on which to base critical design decisions. A visit also provides the opportunity to clarify values, goals, and expertise of individual participants; and identif conflicts early so they can be resolved. Another advantage of a systematic walkthrough or touring visit is the surprises it may bring, and the opportunity to consider new possibilities. Two touring teams of two people each could diagnose a school building in a few hours. The actual site visit typically includes:

•An initial orientation interview with the principal and staff members familiar with the school being studied to gain an overall orientation to the site, the mission, and the educational philosophy.

•A touring interview where the team visits the major spaces in the school with someone familiar with the educational program, asking questions and observing building features to identify what works well and what works less well.

•Recording observations of all major spaces on a SPACE ASSESSMENT WORKSHEET that includes a photograph of the space, a rating system and written notes.

•Conducting a wrap-up meeting at the site to identify new options and to clarify how the results of the visit relate to the design project.

The product of a walkthrough visit usually includes a visual record and written notes. Photographic prints of the major spaces and features are useful reminders later in the design process.

Prior to the site visit it is useful to have plans of the school building. If these are not available, even fire evacuation plans can be used. Creating the appropriate documentation in advance, such as preparing the SPACE ASSESSMENT WORKSHEET, allows the information about the visit to be easily assembled into a report.

Space Assessment Worksheet Space: Classroom Area:

SPATIAL LAYOUT

	Exc	Good	Fair	Poor
Personal space			●	
Shared space		●		
Circulation			●	
Access to storage			●	
Access to lockers				●
Access to outdoors				●
Technological adaptability				●
Connections between activities		●		

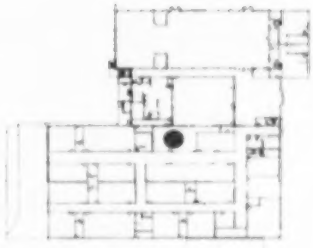
SEATING ARRANGEMENT

- Rows ☐
- Group ●
- Rows and groups ☐
- Horse shoe ☐
- Circle ☐

PHYSICAL ATTRIBUTES

	Exc	Good	Fair	Poor
Amount of space			●	
Lighting			●	
Day lighting				●
Acoustics			●	
Temperature		●		
Flexibility of use		●		
Aesthetic appeal				●
Ventilation and air flow			●	
Color				●
Visual distraction			●	

FLOOR PLAN



FURNITURE

	Exc	Good	Fair	Poor
Movable furniture (desks,chairs)		●		
Flexibility in furniture arrangement		●		
Fixed features (walls, windows)			●	
Wall-boards for display			●	

NOTES

PHOTOGRAPH OF EXISTING SPACE

BEST COPY AVAILABLE

Space Assessment Worksheet Space: Classroom Area:

SPATIAL LAYOUT

	Exc	Good	Fair	Poor
Personal space			●	
Shared space			●	
Circulation			●	
Access to storage			●	
Access to lockers				●
Access to outdoors				●
Technological adaptability			●	
Connections between activities				●

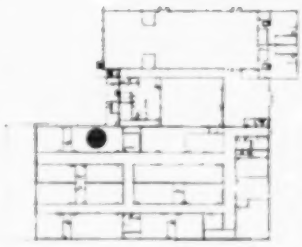
SEATING ARRANGEMENT

- [x] Rows
- [ ] Group
- [ ] Rows and groups
- [ ] Horse shoe
- [ ] Circle

PHYSICAL ATTRIBUTES

	Exc	Good	Fair	Poor
Amount of space			●	
Lighting			●	
Day lighting				●
Acoustics			●	
Temperature		●		
Flexibility of use		●		
Aesthetic appeal				●
Ventilation and air flow			●	
Color				●
Visual distraction				●

FLOOR PLAN



FURNITURE

	Exc	Good	Fair	Poor
Movable furniture (desks,chairs)			●	
Flexibility in furniture arrangement		●		
Fixed features (walls, windows)				●
Wall-boards for display			●	

NOTES

PHOTOGRAPH OF EXISTING SPACE

Jamestown Middle School

Located in North Carolina, the Jamestown Middle School was identified as one of eight middle schools to receive benefits from the approval of School Bonds for Guilford County. The bond funds were to be utilized for the construction of twelve new classrooms, though technology upgrades, media center expansion, and an auxiliary gymnasium was also included.

The 7 million-dollar expansion proposal was an outgrowth of a revitalization strategy adopted by the county Board of Education in 1995. The Guilford County Process was reported in an article in the Middle School Journal (George, West, Jones, Priddy, & Allred, 2000). The process was initiated by the creation of a middle school task force that included teachers, parents, and administrators. After months of discussion, a vision statement for the county schools was adopted and included such elements as:

- Focus on academic achievement in the core curriculum
- Daily teacher advisory
- Team organization at every grade
- Differentiated instruction
- Heterogeneous grouping in science and social studies
- Flexible block scheduling
- An expanded menu of electives and student activities

An integral part of the revitalization plan was regular, public evaluations of middle schools. An annual middle school survey focused on all seven elements of the middle school plan. It included questions about flexible block scheduling, team organization, diversity and equity, differentiated instruction, school climate and parent involvement. While the revitalization of the middle schools in Guilford County is described as a work in progress, public confidence in the county schools has risen.

To support the county's middle school revitalization effort a process of discovery was developed, using the methodsin this manual, where teachers could interact and collectively use their creativity and skills in shaping their new environment. The outcomes resulting from this process are not only for improving physical conditions, but also for teachers to be able to make connections between educational objectives and the learning environment.

Dr. Beverly Tucker, Principal, of the Jamestown Middle School agreed to participate in such a process in anticipation of the availability of funds for the construction of new and remodeled facilities. The middle school consists of 6th, 7th and 8th grade, with fourteen classes in each grade, approximately 1000 students. Teaming varied between groups of 2, 3, and 4 classes within grades, depending upon the expertise of the teachers.

The first step in the process began with a qualitative assessment of the present school facilities conducted by students and teachers. The SCHOOL B UILDING RATING SCALE was administered to a typical sixth, seventh, and eighth grade class totaling 67 students, and to all middle school teachers. Findings from this survey revealed a number of key deficiencies identified by students and teachers:

- Lack of spaces for individual learning styles
- Lack of private space for students inside and outside the building
- Lack of outdoor learning environments
- Lack of outside quiet areas for eating
- Poor connection between indoor and outdoor areas
- Poor adaptability of classrooms to changing uses

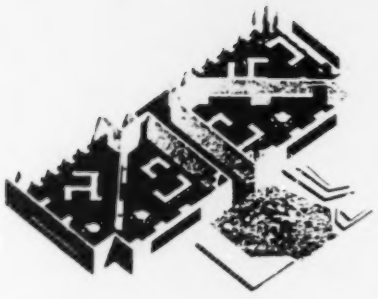
A three-day intensive fact finding process began with a systematic inventory of the existing school building where a team of three people visited classrooms, met with teachers and staff to document key deficiencies as well as the schools desirable features. At the end of the first day, fifty-four teachers and staff gathered for a workshop where they reviewed the results of the SCHOOL BUILDING RATING SCALE. The focus of the workshop then shifted to the classroom where teachers, working in small groups, rated the six alternatives, shown in the CLASSROOM ARRANGEMENT RATING SCALE, to eleven evaluative statements. Groups discussed the features of each classroom alternative until they reached agreement. The "L" shaped classroom in picture 3 received considerable agreement to the majority of statements.

The second and third day was devoted to reviewing site conditions that included the location of bus and car pick-up and drop-off for the increased student population. Considering the availability of locations for a twelve classroom addition, two design proposals were developed and presented to the teachers in a final workshop on the third day. The proposals reflected the concerns of the school community through the surveys and workshops which included provisions for:

- Appropriate parking area for buses and parents
- Direct and safe access from bus loading to the building
- Easy access to classrooms for all students
- Team teaching supportive classrooms
- Daylight in all classrooms
- Outdoor learning facilities directly accessible from classrooms
- Safe outdoor environment
- Visual appeal to the classroom addition
- Transition spaces inside and outside the building
- Variation in new classroom addition

Twenty four teachers joined this session and rated each design alternative according to seven evaluative statements, selecting scheme B.

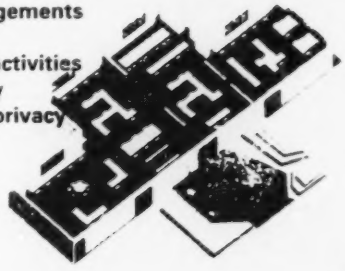
4- students choose learning activities
6- variety of teaching methods
11- circulation minimized



1

2

1- student s move around
2- student s manipulate objects
3- varied seating arrangements
7- team teaching
8- transition between activities
9- teachers move easily
10- student's sense of privacy



3

4

5- small groups work independently

5

3- varied seating arrangements
9- teachers move easily

6

Teacher Responses to Classroom Arrangements

Wish Poem

The attendees of a Parent-Teachers Association (PTA) meeting at the Jamestown Middle School were asked to make three wishes regarding their new school expansion. This list reflects the concerns expressed by the participants.

I wish my school had larger classrooms.

I wish my school had more comfortable classrooms.

I wish my school had a larger and more modern cafeteria.

I wish my school had better landscaping.

I wish my school had better traffic flow for bus and car drop-off.

I wish my school had a more pleasing entrance.

I wish my school had larger halls.

I wish my school had a larger and separate gymnasium.

I wish my school had a separate auditorium.

I wish my school had more daylight.

I wish my school had better and more visitor parking.

I wish my school could get rid of the trailers.

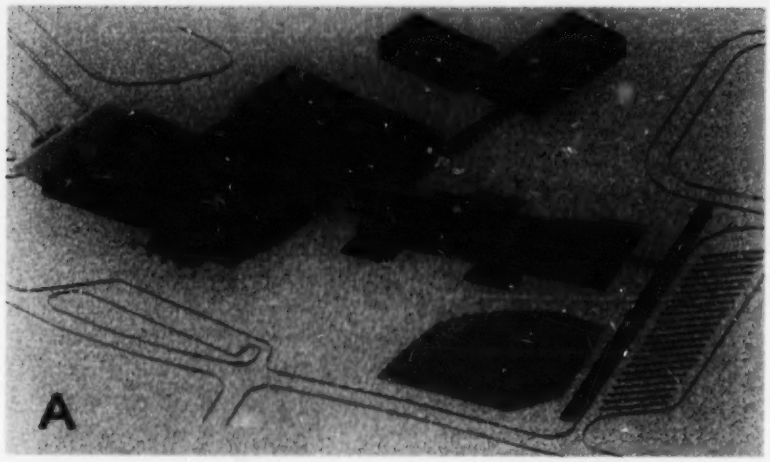
Classroom

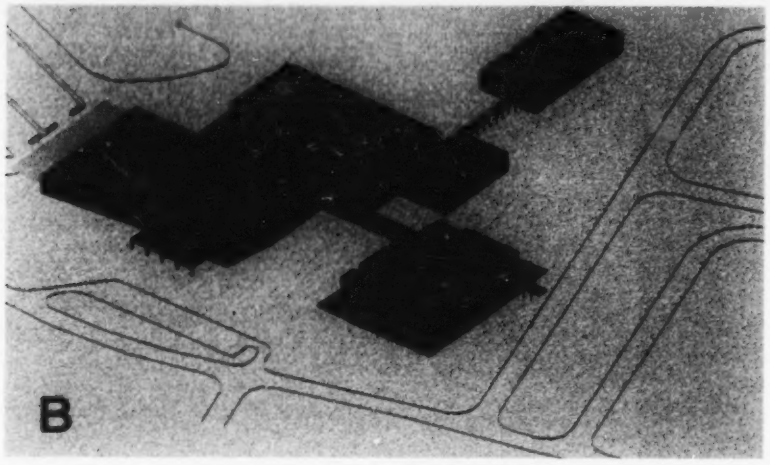
Visitor Entrance

Student Entrance

Teacher Workshop

Design Alternatives





	A	B
1- Safe outdoor environment	-	•
2- Visual appearance of the classroom addition	•	•
3- Transition spaces inside and outside the addition	•	•
4- Relationship of classrooms in the building addition	-	•
6- Student and teacher friendly classroom addition	-	•
7- Interesting variation in the addition massing	-	•

Teacher Preferences for Design Alternatives

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